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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/608,092	06/30/2003	Joe W. Gray	7045945002	8136

23517 7590 08/25/2010

BINGHAM MCCUTCHEN LLP
2020 K Street, N.W.
Intellectual Property Department
WASHINGTON, DC 20006

EXAMINER	
BRUSCA, JOHN S	

ART UNIT	PAPER NUMBER
1631	

MAIL DATE	DELIVERY MODE
08/25/2010	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/608,092	GRAY ET AL.	
	Examiner	Art Unit	
	John S. Brusca	1631	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 July 2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *133,134 and 141-143* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *133,134 and 141-143* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *30 June 2003* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☒ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *5/25/2010*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Status of the Claims

1. Claims 133, 134, and 141-143 are pending.

Claims 133, 134, and 141-143 are rejected.

Priority

2. This application repeats a substantial portion of prior Application No. 09/765,291 filed 22 January 2001, and adds and claims additional disclosure not presented in the prior application. **Since this application names an inventor or inventors named in the prior application, it constitutes a continuation-in-part of the prior application.** Should applicant desire to obtain the benefit of the filing date of the prior application, attention is directed to 35 U.S.C. 120 and 37 CFR 1.78. **Benefit for the claimed subject matter regarding products comprising a probe complementary to a deletion region of a chromosome is not granted to any of the applications for which benefit is claimed under 35 U.S.C. 120 because the claimed subject matter is not described in the parent applications.**

3. A reference to the prior application must be inserted as the first sentence(s) of the specification of this application or in an application data sheet (37 CFR 1.76), if applicant intends to rely on the filing date of the prior application under 35 U.S.C. 119(e), 120, 121, or 365(c). See 37 CFR 1.78(a) The applicants are requested to submit an amendment to the specification or an Application Data Sheet to perfect their claim for priority. **For benefit claims under 35 U.S.C. 120, 121, or 365(c), the reference must include the relationship (i.e., continuation, divisional, or continuation-in-part) of all nonprovisional applications. A review of the claim for priority in the transmittal paper filed 30 June 2003 shows that many**

of the stated relationships are incorrect. For example, the instant application was not filed as the result of a restriction requirement in Application No. 09/765,291, and is not a divisional of that application.

4. In the amendment received 08 July 2010, priority was claimed to Application No. 08/537,305, which does not have a common inventor and is not a prior application to the preceding application in the list of claims as required by 35 U.S.C. 120. It is likely that the amendment contained a typographical error and the claimed application was intended to be Application No. 07/537,305 which has a common inventor and is a prior application to the preceding application in the list of claims. If corrected to Application No. 07/537,305 the claim will be considered to be a correction of a typographical error that does not require a petition under 37 CFR 1.78 (a)(3).

5. In the amendment received 08 July 2010, priority was claimed to Application No. 07/444,669, which is not a prior application to the preceding Application 07/382,094 in the list of claims as required by 35 U.S.C. 120. The claim for priority for Application No. 07/444,669 is therefore improper and the applicants should delete the claim from the first sentence of the specification in response to this Office action.

6. If the reference to the prior application was previously submitted within the time period set forth in 37 CFR 1.78(a), but not in the first sentence(s) of the specification or an application data sheet (ADS) as required by 37 CFR 1.78(a) (e.g., if the reference was submitted in an oath or declaration or the application transmittal letter), and the information concerning the benefit claim was recognized by the Office as shown by its inclusion on the first filing receipt, the petition under 37 CFR 1.78(a) and the surcharge under 37 CFR 1.17(t) are not required.

Applicant is still required to submit the reference in compliance with 37 CFR 1.78(a) by filing an amendment to the first sentence(s) of the specification or an ADS. See MPEP § 201.11.

Information Disclosure Statement

7. The information disclosure statement (IDS) submitted on 25 May 2010 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner. Some copies of references were not provided and have been lined through to indicate they were not considered.

8. The Information Disclosure Statement filed 25 May 2010 does not contain a legible copy of each reference listed on the list of references. It is not known whether this is an error of the applicants or a scanning error by the Office. Consequently the missing references have been listed as not considered in the signed copy of the list of references attached to this Office action. If the applicants provide a legible copy of the missing references in response to this Office action, the references will be considered under 37 CFR 1.97(f), and a signed copy of the list of references indicating consideration of the missing references will be provided to the applicants without the necessity of the applicants filing a second Information Disclosure Statement.

Oath/Declaration

9. This application presents a claim for subject matter not originally claimed or embraced in the statement of the invention. The Declaration filed 30 June 2003 does not identify the instant application or the preliminary amendment received 30 June 2003 that contains subject matter not present in the application number identified on the declaration (see MPEP 602V, 608.04(b), and 714.01(c). The subject matter not present in the specification of the application is a product comprising two probes that are substantially complementary to an entire breakpoint region,

which is claimed in the preliminary amendment filed with the application on 30 June 2003. Applications filed prior to 21 September 2004 require acknowledgement of preliminary amendments in the declaration. A supplemental oath or declaration is required under 37 CFR 1.67. The new oath or declaration must properly identify the application of which it is to form a part, preferably by application number and filing date in the body of the oath or declaration. See MPEP §§ 602.01 and 602.02.

Drawings

10. The specification mentions drawings with features in color in the Brief Description of the Drawings on pages 26-33. No color drawings are present in the application file. Under the assumption that the drawings are intended to be color drawings, the drawings are objected to.

11. Color photographs and color drawings are not accepted unless a petition filed under 37 CFR 1.84(a)(2) is granted. Any such petition must be accompanied by the appropriate fee set forth in 37 CFR 1.17(h), three sets of color drawings or color photographs, as appropriate, and, unless already present, an amendment to include the following language as the first paragraph of the brief description of the drawings section of the specification:

> The patent or application file contains at least one drawing executed in color. Copies of this patent or patent application publication with color drawing(s) will be provided by the Office upon request and payment of the necessary fee.

Color photographs will be accepted if the conditions for accepting color drawings and black and white photographs have been satisfied. See 37 CFR 1.84(b)(2).

Claim Objections

12. The objection to claims 130, 138, and 141 under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim in the Office action mailed 08 April 2010 is withdrawn in view of the amendment received 08 July 2010.

Claim Rejections - 35 USC § 112

13. Claims 127-143 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention in the Office action mailed 08 April 2010 is withdrawn in view of the amendment received 08 July 2010.

14. The rejection of claims 127-143 under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement in the Office action mailed in the Office action mailed 08 April 2010 is withdrawn in view of the amendment received 08 July 2010.

15. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

16. Claims 133, 134, and 141-143 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The claimed subject matter is a product comprising a probe that hybridizes to a region that has been deleted from a chromosome. The specification describes in figure 11F and pages 32-33 a staining pattern that would be observed from a probe that hybridizes to a region that has been deleted from a chromosome. Guidance is given to avoid the use of such probes as follows:

> A deletion could also be detected with a probe that stains only the deleted region; however, lack of probe binding may be due to reasons other than deletion of the target sequence.

The specification mentions one deletion at 13q14 that is associated with retinoblastoma on page 113, but does not describe the structure of a probe that would hybridize to the deleted region or how to use such a probe.

The specification does not describe the structure of a representative number of species of the claimed genus to describe the claimed subject matter.

The CAFC recently held that 35 U.S.C. 112 first paragraph has a separate written description requirement and that generic claims must describe a representative number of species or a correlation between the claimed function and structure of the claimed product to describe a claimed genus. See Ariad Pharmaceuticals Inc., Massachusetts Institute of Technology, The Whitehead Institute for Biomedical Research, and The President and Fellows of Harvard College v. Eli Lilly and Company (United States Court of Appeals for the Federal Circuit, Case No. 2008-1248, Decided March 22, 2010, available at http://www.cafc.uscourts.gov/opinions/08-1248.pdf)

At pages 20-23:

> Although many original claims will satisfy the written description requirement, certain claims may not. For example, a generic claim may define the boundaries of a vast genus of chemical compounds, and yet the question may still remain whether the specification, including original claim language, demonstrates that the applicant has invented species sufficient to support a claim to a genus. The problem is especially acute with genus claims that use functional language to define the boundaries of a claimed genus. In such a case, the functional claim may simply claim a desired result, and may do so without describing species that achieve that result. But the specification must demonstrate that the applicant has made a generic invention that achieves the claimed result and do so by showing that the applicant has invented species sufficient to support a claim to the functionally-defined genus.
>
> Recognizing this, we held in Eli Lilly that an adequate written description of a claimed genus requires more than a generic statement of an invention's boundaries. 119 F.3d at 1568. The patent at issue in Eli Lilly claimed a broad genus of cDNAs purporting to encode many different insulin molecules, and we held that its generic claim language to "vertebrate insulin cDNA" or "mammalian insulin cDNA" failed to describe the claimed genus because it did not distinguish the genus from other materials in any way except by function, i.e., by what the genes do, and thus provided "only a definition of a useful result rather than a definition of what achieves that result." Id.
>
> We held that a sufficient description of a genus instead requires the disclosure of either a representative number of species falling within the scope of the genus or structural features common to the members of the genus so that one of skill in the art can "visualize or recognize" the members of the genus. Id. at 1568-69. We explained that an adequate written description requires a precise definition, such as by structure, formula, chemical name, physical properties, or other properties, of species falling within the genus sufficient to distinguish the genus from

other materials. Id. at 1568 (quoting Fiers v. Revel, 984 F.2d 1164, 1171 (Fed. Cir. 1993)). We have also held that functional claim language can meet the written description requirement when the art has established a correlation between structure and function. See Enzo, 323 F.3d at 964 (quoting 66 Fed. Reg. 1099 (Jan. 5, 2001)). But merely drawing a fence around the outer limits of a purported genus is not an adequate substitute for describing a variety of materials constituting the genus and showing that one has invented a genus and not just a species.

In fact, this case similarly illustrates the problem of generic claims. The claims here recite methods encompassing a genus of materials achieving a stated useful result, i.e., reducing NF-κB binding to NF-κB recognition sites in response to external influences. But the specification does not disclose a variety of species that accomplish the result. See Eli Lilly, 119 F.3d at 1568 ("The description requirement of the patent statute requires a description of an invention, not an indication of a result that one might achieve if one made that invention."). Thus, as indicated infra, that specification fails to meet the written description requirement by describing only a generic invention that it purports to claim.

We also specifically addressed and rejected Ariad's argument regarding original claims in Fiers, 984 F.2d at 1170, and again in Enzo, 323 F.3d at 968. In Fiers, we rejected the argument that "only similar language in the specification or original claim is necessary to satisfy the written description requirement." 984 F.2d at 1170 (emphasis added). Rather, we held that original claim language to "a DNA coding for interferon activity" failed to provide an adequate written description as it amounted to no more than a "wish" or "plan" for obtaining the claimed DNA rather than a description of the DNA itself. Id. at 1170-71. That Fiers applied § 112, first paragraph, during an interference is irrelevant for, as we stated above, the statute contains no basis for ignoring the description requirement outside of this context. And again in Enzo we held that generic claim language appearing in ipsis verbis in the original specification does not satisfy the written description requirement if it fails to support the scope of the genus claimed. 323 F.3d at 968. We concluded that "[a] claim does not become more descriptive by its repetition, or its longevity." Id. at 969.

Ariad argues that Eli Lilly constituted a change in the law, imposing new requirements on biotechnology inventions. We disagree. Applying the written description requirement outside of the priority context in our 1997 Eli Lilly decision merely faithfully applied the statute, consistent with Supreme Court precedent and our case law dating back at least to our predecessor court's Ruschig decision. Neither the statute nor legal precedent limits the written description requirement to cases of priority or distinguishes between original and amended claims. The application of the written description requirement to original language was raised in Fiers, Eli Lilly, and Enzo, and is raised again by the parties here. Once again we reject Ariad's argument and hold that generic language in the application as filed does not automatically satisfy the written description requirement.

17. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 133, 134, and 141-143 are indefinite for recitation of a probe or probe set "sufficient in length and substantially complementary to a deletion region of a chromosome" in claims 133 and 141, and "said first probe set will hybridize to the deletion region" in claim 141 because a probe cannot be complementary to a region that is absent from a chromosome. The rejection would be overcome by amendment the claims to recite "a probe set sufficient in length and substantially complementary to a region that has been deleted from a chromosome."

For the purpose of examination, the claims have been assumed to incorporate the suggested amendments.

Claim Rejections - 35 USC § 103

18. The rejection of claims 127-143 under 35 U.S.C. 103(a) as being unpatentable over Dewald et al. in the Office action mailed 08 April 2010 is withdrawn in view of the amendment to the claims received 08 July 2010.

19.

20. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

21. Claims 133, 134, and 141-143 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dryja et al. (Proceedings of the National Academy of Sciences USA Vol. 83, pages 7391-7394 (1986)).

The claimed subject matter is a set of probes, at least one of which hybridizes to a region of a chromosome that has been deleted, and at least one of which hybridizes to a region of a chromosome flanking a region that has been deleted. In some embodiments the set of probes is detectably labeled, the set of probes are in a kit, and the probe that hybridizes to a region of a chromosome that has been deleted is in a first container and the probe that hybridizes to a region flanking a region that has been deleted is in a second container.

Dryja et al. shows on page 7391 that retinoblastoma tumor tissue often comprises a deletion in the 13q14 chromosomal region and that retinoblastoma is considered to be caused by loss of a dominant allele that prevents tumor formation. In the Materials and Methods section on page 7391, the Origin of Probes section states that three loci within 13q14 are the esterase D locus and probes pH3-8 and pH2-42. Probe 7D2 is described as being closely linked to the esterase D locus. In the Results section on page 7392 and Figure 1, labeled probes are used to detect hybridization of blotted DNA from two retinoblastoma tumor tissue samples (numbers 9 and 27). The samples hybridize to H2-42 and 7D2 probes but not to the H3-8 probe, indicating a deletion of the H3-8 region. Although tumor 27 was only hybridized to one 13q14 probe H3-8 in the lower blot in figure 1, the text in the left column of page 7392 notes that none of the samples tested deleted regions affecting hybridization of the H2-42 or 7D2 loci. On page 7393, in the left column the limits to the size of the deletions is described as being within the proximal esterase D locus and the distal probes pHU26 and p9D11, which also hybridize to tumors 9 and 27. In the discussion section on page 7393, Dryja et al. state that use of the probes avoid the potential shortcomings in diagnosing chromosomal aberrations based on abnormal levels of enzyme activity.

Dryja et al. does not show a product comprising the two labeled chromosomal probes, or probes in a kit, or a kit comprising two containers, one of which contains a probe that hybridizes to the region that has been deleted and the other comprising a probe that hybridizes to a region flanking the region that has been deleted.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to collect the probes of Dryja et al. in containers or a kit to facilitate ease of performing the assay shown in Dryja et al. because Dryja et al. shows that the probes are useful for a clinical diagnostic assay of retinoblastoma deletions, and because the probes avoid the potential shortcomings of measurement of enzyme activity. It would have been further obvious to provide the deletion and flanking probes in separate containers to allow for separate assay for each probe as desired, as shown in the lower blot in figure 1 of Dryja et al.

Double Patenting

22. The rejection of claims 127-143 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1 and 3 of U.S. Patent No. 6,280,929 in the Office action mailed 08 April 2010 in view of the amendment to the instant claims received 08 July 2010.

Conclusion

23. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

24. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John S. Brusca whose telephone number is 571 272-0714. The examiner can normally be reached on M-F 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marjorie A. Moran can be reached on 571-272-0720. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/John S. Brusca/
Primary Examiner, Art Unit 1631

jsb